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EDITORIAL

In a democratic country like India every child has the right to get education.

'Education for all' will remain an unfulfilled dream if the education of children with special needs is ignored. Education for children with special needs like hearing impaired, visually impaired, learning disabled, physically handicapped and slow learners needs to be accessible, affordable and appropriate. Dr. Anupama Jagtap's research is an in-depth study of the schools in Maharashtra that have successfully integrated disabled children into mainstream education.

Dr. Smita Phatak and Dr. Rajashree Mundhe's studies focus on the use of a variety of instructional strategies like Models of Teaching and Computer Aided Instruction to successfully teach concepts to slow learners.

Developing scientific attitude in students is of utmost importance. Dr. Sangita Shirode's research study gives a concrete programme for developing scientific attitude in pre-service teacher trainees. Just having a superior intelligence quotient is not enough to lead a successful and contented life. Adjustment is the key to a balanced and harmonious life. Dr. Jayashree Karambe has undertaken the standardization of an adjustment inventory for students at secondary and higher secondary level in her research study.

Lastly, Dr. Mali's article gives us an insight into the people's participation in the educational development in rural India.

Thus this issue of Research Bulletin includes a variety of areas in educational research Comments and suggestions regarding the various articles published in this issue are welcome.

A. M. Bedge
Director,
Maharashtra State Council of Educational
Research and Training, Pune 30.

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Preparation of Teaching Programme for Developing Scientific Attitude amongst B.Ed. Students and Study Its Efficacy

By Smt. Sangita N. Shirode.

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1.1 The Need of Research :

The teacher is supposed to be the main pillar in building a nation. It is the duty of the teacher to strengthen the new generation and to prepare the citizens to face boldly the present age of science and technology. In this regard Kothari Commission has rightly stated in its Report, 'The destiny of India is now being shaped in her classrooms.' (1964-1966, Page No. 1)

This is the dynamic age and hence we find rapid changes in society. If teacher is aware of these changes then he will be able to transfer the new knowledge effectively to the new generation and bring the changes in the society. For this purpose the teacher should be able and capable to face the new challenges.

The National Council of Educational Research and Training has published the Report in Dec. 2000 regarding National Curriculum Framework for School Education. Its expectation is as under :

"School Education in recent times has emerged as an important segment of the total educational system expected to contribute significantly to the individual as well as the national development process." (N.C.E.R.T., Dec.2000, Page No. 2).

Only teachers can fulfil this expectation about school education. In order to bring out the changes in the process of development of an individual and a nation, and to prepare new generation accordingly, the teacher must change himself completely.

1.1.2. Present Situation :

The present educational system is 'teacher centered.' Many teachers take the shelter of lecture method in the classroom teaching and give more stress on memorization and students use memorization as the supreme method of learning.

They learn the principles, theories and laws without empirical testing. This method of acquiring knowledge does not encourage problem solving and decision making abilities of the students. The practical subjects such as Geography, Sciences etc. are taught only by reading the textbooks, without obtaining the first hand experiences. The students are not allowed to perform the experiments. Moreover in some schools there are no laboratories and in some schools, there are laboratories but without sufficient experimental equipments. The students are not allowed to ask their doubts and necessary queries. This affects adversely on the natural abilities of students such as self-search, problem solving. This adversely results on the development of scientific attitude of the students. The scientific attitude is one or the elements of the 'Ten Core' factors included in the National Educational Policy 1986.

The present educational system creates disturbances in the National Development process. The teacher alone can change this system and has the ability to change it. Formerly it was sufficient for the teacher to have the knowledge and interest in teaching. But today the role of a teacher has changed due to the explosion of knowledge in various fields. The teacher is not only expected to have mastery and up-to-date knowledge of his subject but due to vast changes in science and technologies, the levels of life are changing rapidly, hence the teacher should be well acquainted with these changes and try to face these changed situations promptly and effectively. Today the students are well versed and well informed, due to the media services, i.e. Radio, T.V., Newspapers, Computer and Internet. Hence, imparting the knowledge and providing the information should not confine the concept of teaching. Thus the concept of teaching should be newly defined, as self-learning, acquiring necessary skills, developing desirable attitudes, and imbibing socially useful qualities. The objectives of teaching should help the pupils for self-learning, to acquire necessary skills, to develop desirable attitudes and imbibe in them socially useful qualities.

The teacher should provide up-to-date knowledge to the students in order to develop the inborn abilities, capabilities and desirable attitudes. They should help the students to be independent, self-motivated, self-learner. For this purpose the teacher should be well versed and competent in his subject and should be interested in every field and in every walk of life. Hence, he should be a friend, guide and philosopher of the students and should create curiosity among them. He should provide them proper opportunities for their development, help them to develop desirable attitudes and scientific attitude.

In order to develop the above qualities among the students, it is necessary for the teacher to have these qualities with him. The Colleges of Education should prepare such teachers, which is possible through proper teacher education. The best, systematic and up-to-date teacher education will be useful to the teachers and future generations.

The present position of teacher education is described in the report 'National Educational Policy 1986, 'Shaikshanik Karyakramatun Kruti Karyakramakade. 'It is as under :

"There is no proper and effective planning of teacher training in colleges of education. There is no scope for clarity and purity of knowledge, writing and speaking skills, developing curiosity, leadership qualities and scientific attitude." (M.S.C.E.R.T., 1986, Page No. 55)

'YASHADA', Pune conducted a seminar on 'Enhancing the Quality Of Teacher Education on 18th to 20th June 1999. In the seminar, recommendations of the Five Commitment Areas for teacher education are suggested. The fifth area is development of the some factors of scientific attitude.

Commitment to Basic Human Values :

Genuine practice of professional values such as impartiality, objectivity, intellectual honesty, national loyalty etc. with consistency. (June 1999, Page 10)

In 1968, UNESCO has published general and specific objectives of teacher education. Dr. N. R. Parasnis has given these objectives in his book - 'Shikshakanche Prashikshan.'

Attitude is one of the specific objectives.

The following is one of the specifications given under this objective :

1) To develop scientific attitude to solve the problem (1993, Page No. 21)

National Council of Teacher Education has also stated, "To cultivate rational thinking and scientific temper", is one of the objective of Teacher Education. (N.C.T.E., 1996-1997, Page 20).

This objective suggests creation and development of scientific attitude among the B.Ed. students through teacher Education.

The researcher is teacher educator. She decided to review the objectives of teacher education related to scientific attitude in relation to the present status of B.Ed. students. For this survey was conducted.

1.1.3. Pre-Study :

The researcher had undertaken the pre-study on the B.Ed. students of the S.N.D.T. College of Education, Pune in the year 1999-2000. For this study she used Dr. Kadlaskar's Scientific Attitude Scale. The scores received on this scale were compared with the scores received on the same by X std. students. It was found that the scientific attitude of the B.Ed. students was at the level of school going students.

It is clear from this study that efforts should be done in teacher education institutes for development of scientific attitude. The teacher training institutions or the colleges or education should undertake this responsibility and provide training programe, accordingly.

Dr. K. K. Vasishta has stated one of the objectives of teacher education as :

"Development of healthy attitudes among teachers towards the profession, the society and the nation. It should inculcate leadership, so as to help the teachers to inspire the young generation with new ideas." (Vasishta K. K. 1977, Page No. 3)

For this purpose, the teacher-educators must change their methods of teaching. They should plan their teaching properly. They should provide more activities to the student teachers. They should encourage the student teachers to undertake various educational programmes. They should give more freedom to student teachers, to ask questions in case of doubts. This will help the student teachers to use different methods in their practice teaching and provide necessary opportunities for developing skills and abilities in the student teachers. If this happens then only, the objectives of teacher education will be fulfilled and achieved in true sense. The researcher has undertaken this responsibility herself firstly, and accordingly she has changed her methods of teaching for the B.Ed. students in order to bring the changes in the mental make up of her students. She reviewed the related literature.

1.2 Study or Related Literature

It is necessary to take review of the related literature in any type of research. This study helps the researcher in the following ways :

1) It avoids repetition in the research.

2) It helps the researcher to form the hypothesis and give suggestions for further research, which gives new direction for further research.

3) It helps the researcher to have the proper background of the subject and helps to understand the different aspects of the subject.

4) It helps to understand the research work done in the specific field and is comparatively related to which cognitive stage.

5) It helps to understand the information about the research problem.

6) It provides the background for the research topic.

Moreover, this study helps the researcher to specify the problem, to understand the significance of the problem, for knowing the data collection tools and for analyzing techniques.

The researcher had decided to work on scientific attitude; hence she studied different researches of the similar topic in India and out of India. She classified all these researches in three groups.

1) To determine the aspects of scientific attitude and preparation of attitude scale.

2) Measurement of scientific attitude.

3) Preparation of programme for developing scientific attitude, implementation of the programme and study its efficacy.

After studying the researches, the researcher derived at the following conclusions :

1. There is low level of scientific attitudes in teachers. According to New Educational Policy (1986), scientific attitude factor has been given a prominent place in the school be inculcated amongst the B.Ed. students through Teacher Education.

2. Various researchers have studied scientific attitude and suggested the preparation of educational programme, planning of teaching and varieties in teaching for development of scientific attitude among school students. However, nobody has prepared and implemented the programme for the B.Ed. students for development of scientific attitude.

3. The efforts for development of scientific attitude are done through science education for the school children. No one has studied on development of scientific attitude through other subjects.
4. In the Fifth Education Survey Dr. N. Vaidya has suggested "It is very necessary to throw a bridge between an experimental project and a development project. The observation is equally applicable to some of the independent projects reviewed. For example a module is developed which is not used and tested for classroom relevance Why? The said project is over. Or it is then concluded by desirable statements which lead no one anywhere." (N.C.E.R.T., 1988-1992, Page 364)

After reviewing all aspect of related research work, the researcher has decided to students through Educational Psychology.

1.2.1 Title :

Preparation of teaching programme for developing scientific attitude amongst B.Ed. students and study its efficacy.

1.2.2. Objectives :

1. To prepare a teaching programme for developing scientific attitude.
2. To study the efficacy of that programme in terms of whole group, subjects of graduation, achievements in the graduation and achievements in B.Ed. Exam.

1.2.3. Hypothesis :

1. After implementation of the programme the mean score of scientific attitude of B.Ed. students from experimental group will be higher at 0.01 level of significance than the mean score of control group.
2. There is no significant difference in development of scientific attitude on the basis of subject of graduation.
3. There is no significant difference in development of scientific attitude on the basis of achievement in graduation.
4. There is no significant difference in development of scientific attitude on the basis of achievement in B.Ed. Examination.

1.2.4. Scope and Limitations :

1. Study included only the Colleges of Education of S.N.D.T. Women's University.
2. A programme is based on syllabus of Bachelor of Education of S.N.D.T. Women's University only. Only some topics from Educational Psychology and some co-curricular activities are considered for that programme.
3. The researcher is working as a lecturer in the S.N.D.T. College of Education, Pune. So this programme was implemented only on students in the S.N.D.T. College of Education, Pune.
4. Inspite of above limitations this programme may be useful for other Colleges of Education in state to Maharashtra, as syllabus of Educational Psychology varies very little in various universities of Maharashtra, which is the scope of this study.
5. This programme is tested only for female student teachers but can also be useful for all student teachers.

1.2.5. Operational definitions of the terms used in title :

1. Scientific attitude.
2. B.Ed. Students.
3. Preparation of teaching programme.
4. Efficacy.

Before discussing operational definitions it is necessary to explain the meaning of some terms.

1) Scientific attitude -

"Scientific attitude is a response given to a particular situation on the basis of open mindedness, seeking evidences, criticality, empirism and freedom from bias."

Following are the five factors of scientific attitude :

1. Empirism
2. Freedom from bias
3. Open Mindedness
4. Criticality

5. Seeking evidence.

Operational Definitions :

1) Scientific Attitude :

1. Scientific attitude means scores obtained in the Dr. Kadlaskar's Standardized Scientific Attitude Scale.

And

2. Scientific attitude means scores obtained in the Dr. R. P. Sandhya's Standardized Scientific Attitude Scale.

2) B. Ed. Students :

The students learning in the S.N.D.T. College of Education for the Bachelor of Education level in the academic year 2001-2002. As well as the students learning in the Shardabai Pawar College of Education, Shardanager, Baramati for the Bachelor of Education level in the academic year 2001-2002.

3) Preparation of programme :

A programme, which is prepared for enriching the scientific attitude of B.Ed. students.

This programe is prepared on syllabus of Bachelor of Education of S.N.D.T. Women's University. From that syllabus only some units of Educational Psychology and some co-curricular activities are considered. This teaching programme included various teaching methodologies, teaching techniques, teaching aids and teaching experiences.

4) Efficacy :

Efficacy means the changes which are observed after implementation of the programme.

Efficacy is tested on the basis of difference in the pre and post scientific attitude test scores quantitatively and also qualitatively.

1.3. Research Procedure and Data Collection Method :

In this study researcher has used Experimental Method. Following are the steps of experimental method :

1. Selection of problem and determine limitations.

2. Survey of related literature.
3. Determine Experimental design.
4. Fix the population.
5. Planning and implementation of experiment.
6. Analysis of date and testing the hypothesis.
7. Conclusions and suggestions.

1.3.1. Experimental Design :

For this study researcher has used Pre test-Post test experimental design.

1.3.2. Drawing of Experimental Design :

T1 Contro Group T2

Teaching by conventional Method

T1 Experimental Group T2

Teaching by the programme developed under this study

(T1 = Pre test, T2 = Post test)

1.3.3. Variables :

Following are the variables in this research :

1. Independent variable - Teaching programme
2. Dependent variable - Scientific attitude
3. Control variables - a. Pre-post test
    b. Time - schedule
    c. B.Ed. syllabus
    d. University

1.3.4. Date Collection Tools :

For this study researcher has used following tools :

1. Dr. Kadlaskar's standardized scientific attitude scale particularly standardized for high school students.
2. Dr. R. P. Sandhya's standardized scientific attitude scale particularly standardized for teachers.
3. Objective type test based on content of Educational Psychology.
4. Check list used for experimental group for keeping record of participation during teaching-learning process.

1.3.6. Stages of Programme Preparation :

1. To select suitable units from Educational Psychology.
2. To decide the techniques suitable for these units and subunits which will help development of scientific attitude.
3. To plan the lessons.
4. To prepare teaching aids. (Pictures, charts, graphs, worksheets, questionnaire etc.)
5. Experts' opinion on prepared programme.
6. To make changes according to the instructions by the experts.
7. To make final programme.

While preparing the programme according to above stages the researcher used following teaching methods :

1) Lecture 2) Heuristic 3) Experimental 4) Discussion 5) Question-answer 6) Field visit 7) Group-study 8) Exhibition 9) Inductive-deductive.

The researcher used following teaching aids :

1) Newspaper, 2) Reference books 3) Film, 4) Computer slide show, 5) pictures, 6) Cartoons-jokes, 7) Stories, 8) Transparencies, 9) Poems

Considering three theories of attitude development which are, 1) Balanced theory 2) Similarity theory and 3) Congruity Dissonance theory, teaching programme was prepared. 73 lessons were prepared on the following units of Educational Psychology of B.Ed. syllabus :

Unit 1 - Growth and development of learner.

Unit 2 - Individual differences.

Unit 3 - Personality and adjustment.

Unit 4 - Learning process

While preparing programme the researcher first did content analysis of the selected units. She thought about methodology according to unit-subunit. She thought about learning experiences. She selected such a method and experiences that could develop aspects of scientific attitude amongst them.

1.3.7. Sample :

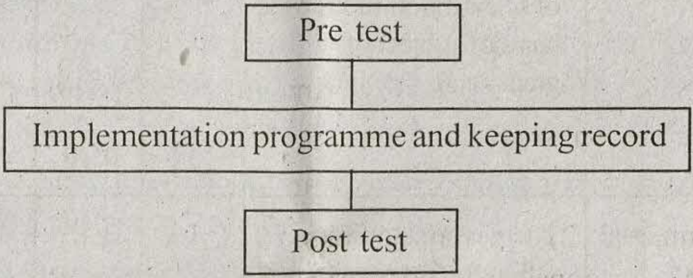
For this study the researcher has used a method of incidental sampling. Experimental and control were the two groups in the sample.

Experimental group was from S.N.D.T. College of Education, Pune of academic year 2001-2002. Control group was from Smt. Shardabai Pawar College of Education, Shardanagar, Baramati, affiliated to S.N.D.T. Women's University of the same academic year 2001-2002. There were 70 B.Ed. students in experimental group and 68 B.Ed. students in control group. Total sample was 138 B.Ed. students.

1.4. Implementation of teaching programme :

Researcher implemented at teaching programme according to the following stages

Flow chart of implementation of programme :



The researcher implemented a programme in 43 days and in between 73 lectures. (One lecture was of 50 minutes.) While implementing the programme the researcher planned various activities. Through these activities the researcher tried developing the aspects of scientific attitude.

1.5. Quantitative and qualitative analysis of data :

For hypothesis testing the researcher used ANOCOVA technique as a statistical tool. After analyzing 'F' value at 0.01 stage of significance it was concluded whether to accept or reject the hypothesis.

Following is the table showing values of F and decision for acceptance of hypothesis :

Hypothesis No.	Testing of hypothesis according to	Hypothesis	Scale No.	F Value		Hypothesis Accepted Rejected
				Resea-rch- h	Table	
1.	Experimental Control Group	After implementation of the programme the scientific attitude of B.Ed. students from experimental group will increase at 0.01 level of significance than control group	1	24.27	6.83	Accepted
			2	17.59	6.83	Accepted
			3	5.89	6.83	Rejected
2.	Experimental group	There is no significance difference in development of scientific attitude on the basis of subject of graduation	1	2.14	4.95	Accepted
			2	0.213	4.95	Accepted
			3	0.49	4.95	Accepted
3.	Experimental group	There is no significance difference in development scientific attitude on the basis of achievement in graduation.	1	2.55	4.10	Accepted
			2	2.67	4.10	Accepted
			3	1.22	4.95	Accepted

4.	Experimental group	There is no significance difference in development Scientific attitude on the basis of achievement in B.Ed. Examination.	1	7.89	4.95	Rejected
			2	1.42	4.95	Accepted
			3	.014	4.95	Accepted

After statistical analysis the researcher has drawn following conclusions. Through these conclusions the objectives of this study are also achieved.

1.6. Conclusions :

1.6.1. From Quantitative Analysis :

1. In this study according to hypothesis 1 null hypothesis is rejected for test 1 and test 2. So the researcher accepted research hypothesis i.e. a teaching programme that is prepared for developing scientific attitude is effective and significant. But for test 3 the calculated F value is 5.89, which is less than table value (6.83) at 0.01 level of significance. So null hypothesis is accepted and research hypothesis is rejected. But it is accepted at 0.05 level of significance because at this level table value of F is 3.91.

   Test 3 is based on content and concepts of Educational Psychology. These were taught to both groups, so there is no difference in scores of test 3.

   According to this hypothesis if we teach by this programme, scientific attitude of student-teacher increases.

2. According to hypothesis 2 for 1, 2, and 3 null hypothesis is accepted. In this case research hypothesis is itself null hypothesis due to that research hypothesis is also accepted.

   According to this hypothesis there is no effect of faculty of graduation on developing scientific attitude. Scientific attitude can develop in students from any faculty.

3. According to hypothesis 3 for test 1, 2, and 3 null hypothesis is accepted. In this case research hypothesis is itself null hypothesis, due to that research hypothesis is also accepted.

According to this hypothesis there is no effect of achievement in degree examination on developing scientific attitude. Development of scientific attitude does not depend on achievement in degree examination.

4. After three months of the implementation of the programme, there was an annual examination of the student-teachers conducted by the University. Hypothesis 4 is formed for testing the effect of developed programme on achievement in B.Ed. Examination.

When hypothesis 4 was tested it was observed that it is rejected in case of test 1 and accepted for test 2 and 3. So it can be said that for test 1 significant difference in development of scientific attitude is observed among different levels of achievements in B.Ed.

Which is other way round in case of test 2 and test 3.

1.6.2. Qualitative analysis :

For qualitative analysis the researcher used tool No. 4. i.e. check list. How the student teacher's behaviour underwent changes recorded by the researcher and derived the following conclusions :

1. In the beginning of teaching only 2-3 B.Ed. students asked queries, but later the number of students who asked their queries rose to 60-62.
2. The B.Ed. students completed their home work and projects and stated the conclusions they derived from it.
3. The B.Ed. students started collecting articles, news from newspapers and magazines which were related to content.
4. B.Ed. students started observing students of that particular age group in the schools and at home and stated their observations.
5. Before the experiment it was observed that most of the students stuck to blind beliefs but after implementation of the programme it was found that they changed their opinion. Even after the completion of the programme they came and stated their observations freely. (Few student-teachers and a firm belief that the sex of child is determined before birth with the help of Chinese calendar and Ayurved therapy. But even after completion of

B.Ed. course some of the student-teachers came to speak of a change in their opinion.)

6. The student-teachers started reading various reference books to enhance the knowledge as suggested by the researcher.

1.7 Suggestions :

This study is useful to develop scientific attitude for teacher educators and student-teachers.

Significance of this study is stated below :

A] Significance of this research for teacher educator -

1. This programme can be used as it is without modification.
2. If the teacher educator's implement various methods stated in this research in their teaching, it will be effective in following ways.
   - I. The boredom of lecture method can be avoided and innovations can be brought in teaching.
   - II. Critical attitude will be inculcated amongst the student teachers by the discussion method.
   - III. Through group work the student teachers will be motivated towards self-learning.
   - IV. By field visits, the student teachers will develop a sense of keen observation, objectivity and deriving conclusions.
   - V. Project work will develop in the student teacher the ability of problem solving.
3. The teacher educators can help in creating an awareness of the use of media for effective teaching at the B.Ed. level.
4. The teacher educators can create awareness among other teacher educators about the use of programme at B.Ed. level.

B] Significance of this research for student teacher :

1. After reading the scientific attitude development programme the student teachers will get a proper direction for learning.

2. The effective implementation of the various activities mentioned in this programme will help the student teachers in fixation of content.
3. After the implementation of this programme the student teachers will be motivated towards self-learning.
4. Due to this study the student teachers will be familiar to various methods of teaching and their implementation.
5. In the absence of the teacher educator of Educational Psychology the student teachers will be able to carry out their learning by reading and performing various activities.
6. Due to the development of scientific attitude among the student-teachers, when appointed a teacher they will be capable of inculcating the scientific attitude among their students.

C] Significance of this research to society -

1. The development of scientific attitude among student-teachers will help them in eradicating superstitious, blind beliefs. This will help in developing scientific attitude in the society as a whole.

1.8. Recommendations for further Research :

1. Preparation of teaching programme for developing scientific attitude amongst B.Ed. students through other subjects of B.Ed. syllabus and study its efficacy.
2. Implementation of this educational programme in other universities for developing scientific attitude amongst B.Ed. students and study its efficacy.
3. Preparation of teaching programme for developing scientific attitude by using remaining units of educational Psychology of B.Ed. syllabus and study its efficacy.
4. Preparation of teaching programme for developing scientific attitude amongst B.Ed. students thought various practical and study its efficacy.
5. Preparation of teaching programme for developing scientific attitude amongst B.Ed. students through co-curricular and extra-curricular activities and study its efficacy.

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2

A Status Study of The Disabled Children In Mainstream Schools in Maharashtra

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Back Ground And Rationale Of The Study :

Normalization involves opening all facts of society to the possibilities for integration. According to Chaudhury, (1990) one of the aim of integration is enable the individual to become integrated in to society as an equal member through participation in the ordinary forms of education available to normal children. Integration is the declared policy of Govt. of India. But what extent has this been implemented so far and in what form? The study aims to answer this question in relation to integration of the children with disabilities in Maharashtra.

Most of the researches in the area of handicapped children's education has been done regarding children with intellectually deficits and visually impairment. Few studies have been conducted for visually impaired and physically impaired children regarding integration. It is in this context that the present study has been taken up to find out how many schools in Maharashtra have provision for Integration, what kind of provisions have been made and also to find out the attitudes of the Heads of institutes, teachers, parents, peers and children with disabilities themselves regarding integration in mainstream schools in Maharashtra.

Objectives of the study :

1) To find out how many schools in Maharashtra have integrated education for children with disabilities and at what stage.
2) To find out which type of children with disabilities have been integrated.
3) To find out the provisions for integration in curricular and co-curricular activities.
4) To find out the problems faced by the teachers and administrators in the process of integration.

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5) To find out the attitudes of the Heads of the institutes and teachers towards integration.

6) To find out the attitudes of peers towards integration.

7) To find out the attitudes of parents of integrated children with disabilities towards integration.

8) To find out the attitudes of children with disabilities towards integration.

9) To identify the factors for effective integration of the model integrated school.

10) To study the differences in academic progress of children with various disabilities.

11) To study the differences in personal integration of children with various disabilities.

12) To study the differences in social integration of children with various disabilities.

13) To find out the differences in academic progress of boys and girls with similar disabilities.

14) To find out the differences in personal integration of boys and girls with similar disabilities.

15) To find out the differences in social integration of boys and girls with similar disabilities.

Methodology of the study :

Design -

This study is survey type. Case study of 50 schools was done followed by ethnographic study of one model school. Case studies of 112 children with various disabilities was done.

Sample -

50 Integrated schools from eleven districts in Maharashtra were selected. Integrated schools were Government aided, non aided, Urban, rural, Marathi and English medium. 56 principals, 6 supervisors, 50 special teachers, 112 class teachers, 115 regular teachers, 300 normal children, 112 children with disabilities and their parents formed the sample.

Procedure -

Questionnaires were prepared and personally administered by the researcher who visited 50 integrated schools. School records and medical reports of children with disabilities were checked. Heads, teachers, special teachers, children and parents of 110 children with disabilities were interviewed. Ethnographic study of one model school was done and video programme prepared.

Finding And Conclusion :

Objective 1 - 556 number of schools in Maharashtra are with integrated education for children with various disabilities; from K. G. to Std. X. Of these 50 integrated schools were taken for case study.

Objective 2 - Four types of children with disabilities were integrated in 50 integrated schools; like -

1. Hearing impaired (HI) - 432.
2. Visually impaired (VI) - 186.
3. Physically impaired (PI) - 179.
4. Intellectually deficit (ID) - 121.

Of these 42 HI, 20 VI, 35 PI, 15 ID were taken for case study.

Objective 3 - The curricula for children with HI was same in 27 schools. In one school children with HI got concessions in school subjects from Std. V. They could take drawing craft, typing, computer instead of Hindi, English and Algebra and Geometry. Children with VI were exempted from drawing figures, Algebra, Geometry and Physical education. They took 150 marks Arithmetic. B. M. C. Schools and some secondary schools gave special training to children with ID. They also got vocational training in craft, making chalks and can work. Children with PI were exempted from physical education. PI children were integrated with normal children from K.G. regarding curricular and co-curricular activities, children with HI took part in sports, games drawing, painting competitions with their peers. Children with VI took art in indoor games, in social annual programme, played musical instruments, sang songs. They also took part in debate and essay competitions with their normal peers. PI children also played indoor games and took part in debate, essay competition and in social annual programme with their peers. ID children also took part in co-curricular activities with normal peers.

The children with various disabilities took part in curricular and co-curricular activities according their ability.

Objective 4 - Problems faced by the Head of the institute, lack of specious resource room with adequate educational facilities. Lack of special trained teachers to teach children with disabilities. Lack of Govt. Grant. Problems faced by the special teachers. They had to prepare all subjects from stand. I to X. In a short time span of 1-2 hours they had to teach all subjects, it was not possible to do justice. The resource rooms were small in shades without light and Ventilation. They also did not get teaching aids in time.

Problem faced by regular teachers. They were not trained in how to deal with children with various disabilities. Due to large number of children they were unable to pay individual attention. Lack of parents co-operation.

Objective 5 - Attitudes of the Heads of the institute regarding integration. They stated integration helped the children with HI, in their socialization and to develop their basic language skills. About children with VI they said, with some special help they could cope with normal children. About children with PI they stated, these children usually studied with normal children. Regarding ID children their attitude was not so positive.

Attitude of the special and regular teachers regarding integration. They said that they treated children with disablities as normal children. They helped these children to give learning opportunities according to their abilities, which would enable them to get fuller benefit. They stated, the children with profound deafness with speech problem, visually impaired children, initially they must be kept in a special school; and then they should be integrated with normal children.

The investigators observation was that the Heads of the most schools was positive only in words but no actual efforts were take. Regular teachers had positive attitude, but no training to cope with children with disabilities. The attitude of the special teachers was positive but they needed adequate educational equipments, good resource room and also required training courses for functioning effectively.

Objective 6 - Attitude of normal peers towards Integration was positive. Hence it can be said that socialization was effective.

Objective 7 - 106 parents out of 110 agreed that integrated education is better than the special education.

Objective 8 - Over-all children with various disabilities preferred integrated schools.

Objective 9 - Factors for integrated education identified through the ethnographic study of a model school. Positive attitude of the Head, the special teachers, regular teachers, peers and parents. Healthy and supporting atmosphere. Co-operation among all persons who were concerned to the Ashram School. Class room and resource room were specious and with adequate educational facilities according to needs of disabilities of the children. Mother approach of the teachers. Trained regular and special teachers. Good interactions among teachers, students, Heads and parents. Teacher student ratio was 1 : 40 (in regular class). Education and religion was the part of integrated education.

Objective 10 - Children with HI and VI were better on academic progress as compared to children with PI and ID. Children with PI were academically better than the children with ID. But children with HI and VI performed equally well in academic progress.

Objective 11 - Children with HI and VI were better on personal Integration as compared to children with PI and ID. Children with PI were better than children with ID. Children with HI and VI performed equally well.

Objective 12 - Children with HI and VI performed equally good in social integration. Children with PI were better than children with ID in social integration.

Objective 13 - Boys and girls with similar disabilities like HI, VI, PI, ID performed equally satisfactory in academic progress.

Objective 14 - Boys and girls with similar disabilities like HI, VI, PI, ID performed equally good in personal integration.

Objective 15 - Boys and girls with similar disabilities performed equally satisfactory in academic progress.

Suggestions and Recommendations -

1) The Head of the institute is the key to the success of integrated education, so the willingness of the school authorities is essential criteria for successful integration. Therefore training of Heads and teachers bringing awareness is essential.

2) Pre-schooling of impaired children is very essential for mainstreaming in our country. Ignorance of parents sometimes became a hurdle in the healthy developments of their children.

3) Skill oriented tasks should be included in curriculum for children with disabilities in all integrated schools.

4) Families should be prepared to send their children early to schools therefore early detections is necessary. Social workers and health workers should be involved.

5) New technology should be developed and made available and media should be used for creating awareness.

6) Positive attitude of teachers regarding integration should be developed through training.

7) To make integrated education more effective modification of syllabus to suit needs of individual child parent education and counselling is important.

8) Warm relationship between parents and schools, parents with parents, sharing of experiences along similar problems should be made available.

9) The disabled children in rural area had difficulty with attendance at school so residential schools for disabled children should be established.

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3

Standardization of an Adjustment Inventory for the Students at Secondary and Higher Secondary Levels

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1.1 Introduction

The problem of mental disorders has been increasing tremendously for the last two decades all over the world. Our country is no exception to this. We have witnessed a rapid growth in mental disorder of all types during this period. The incidences of mental disorder are acquiring unusual dimensions every year causing great concern to educational psychologists, social workers and all those who are closely connected with the welfare of the individual and the society as a whole. The mentally disordered person has become a great liability on nation.

The few of the major factors responsible for this may be repid growth of population, conflict in values, social alienation, industrialization, competition, unemployment, communal disharmony and the materialistic attitude of the people.

Personality and adjustment plays an important role in maintaining mental hygiene proper adjustment at home, at school, in society, at work, to self, in health etc., helps in sound development of an individual and hence the assessment of personality or the adjustment in different areas is essential.

1.2 Adjustment

1.2.1 i) According to white, (1983) "Adjustment represents a compromise between the needs of individual and demand of the society in which he lives. Individual tendencies must be restricted and channeled in certain direction if the person is to function as a member of the social organism ......".

ii) Another definition of adjustment has been given the "Dictionary of Behavioural Sciences" by Wolman, (1973) "Adjustment is harmonious relationaship with the environment involving the ability to satisfy most of one's needs and meet most of demands, both physical and social that are put upon one."

1.2.2 Criteria of good adjustment

Certain criteria have been evolved to assess the adequacy of adjustment of an individual to his/her environment. For example, the following characteristics are important to assess adjustment as achievement.

a) Psychological comfort
b) Work efficiency
c) Physical systems
d) Social acceptance
e) Good subjective feelings
f) Ability to work
g) Personal and social achievement.

An individual starts adjusting with his/her environment from the time of his/her birth. So adjustment is the process which starts from any individual's birth and last till his/her death. There are many adjustment problems from childhood to adulthood. Since the topic of research is to construct the test for secondary and higher secondary students only the major and common adjustment problems of adolescents are considered.

1.2.3 Problems of adolescents

Adolescence is a period of rapid changes in all dimensions of development. Changes in behaviour are accompanied by problem and potential difficulties. Increased complexity of social and economic development due to the use of modern technology have created many adjustment problems that did not exist in the past.

1.3 Purpose of the study

The purpose of the study was to standardize an adjustment inventory for the students of Secondary and Higher Secondary levels; taking in view the Bell's Adjustment Inventory and adding more areas of adjustment viz. academic, Peer relation and Self concept.

1.4 Statement of the problem

"Standardization of an Adjustment Inventory for the students at Secondary and Higher Secondary levels'"

1.5 Scope and limitation of the study

Since the sample was selected from Greater Mumbai, the scope of the study was limited to the geographical areas of Greater Mumbai for establishing norms.

The scope of the study can be extended to all over India provided that the Inventory would be translated in all Indian languages.

1.6 Objective of the study

The study is conducted with following main objectives and sub objectives.

1.6.1 Objectives of the study

1.6.1.1 To standardize an Adjustment Inventory for the students at Secondary and Higher Secondary Levels.

1.6.1.2 To establish grade wise norms for above students for each of the areas of Adjustment and total Adjustment.

1.6.1.3 To establish medium wise norms for above students for each of the areas of Adjustment and total Adjustment.

1.6.1.4 To establish sex wise norms for above mentioned students in above mentioned areas.

1.6.1.5 T establish sex wise and combine norms for 10th Standard students studying in Mumbai Municipal Corporation Schools.

1.6.1.6 To establish Combine Norms for all the students in above mentioned area of adjustment.

1.6.2 Sub Objective

1.6.2.1 To compare Sex wise Adjustment of above groups in all the areas of Adjustment and total Adjustment.

1.6.2.2 To compare Medium wise Adjustment of above groups in all the areas of Adjustment.

1.6.2.3 To compare Grade wise Adjustment of above groups in all the areas of Adjustment.

1.6.2.4 To establish the validity of the standardized Adjustment Inventory.

1.6.2.5 To establish reliability of the standardized Adjustment Inventory.

1.6.2.6 To find out inter co-relations between the different areas of adjustment viz. Home, Health, Social, Emotional, Academic, Peer relations with same sex and Peer relations with opposite sex.

1.7 Educational Significance

It has unanimously been agreed upon by all experts that mental health plays a crucial role in the development of personality. It is impossible to imagine harmonious development of human beings without sound mental health. Mental ill health's has been a subject of study for a long time. Several approaches have been advanced by professionals to explain the factors responsible for it. The various factors may affect the mental health of human beings they are namely

(a) Hereditary factors like
  i) Genetic defects
  ii) Physical handicap
(b) Psychological factors like
  i) Mental deprivation
  ii) Institutionalization
  iii) Deprivation in home
(c) Social cultural factors
(d) War and Violence
(e) Group prejudice and discrimination,
(f) Economic and employment problems.

Whatever may be the case if the maladjusted person is detected in time it can be cured by any therapy, "A stitch in time saves nine."

2.0 The review of related literature

Totally 51 Adjustment Inventories were reviewed by the researcher from India and Abroad out of which 42 inventories were from India and Nine Inventories were constructed abroad.

The Inventories referred above may be classified into five major categories.

1. Inventories for Higher School Students.
2. Inventories for Colleges Students.
3. Inventories for Higher Secondary Students.
4. Inventories for Marital Adjustment.
5. Adaptations of Bell's Adjustment inventory

Out of theses seventeen inventories were constructed for secondary students. Twelve inventories were constructed for Higher Secondary Students. Twelve Studies were on College Students. Nearly seven studies were on Adaptations of Bell's Adjustment Inventory and three studies were on marital adjustment.

2.1 Adjustment and related variables

Prasad (1975) found that boys and girls differ significantly on Home and Family Adjustment. The inventory was highly reliable, and valid. Norms were satisfactory, Inter co-relations indicated a positive direction indifferent areas of adjustment.

Parikh et. al. (1986) studied family adjustment and Academic achievement and found that girls were better in their family adjustment than boys.

Rather (1990) found that boys were having more difficulties than girls.

Badani and Badani (1977) found that the male students were poorly adjusted than female students of middle socio-economic status.

2.2 School and teacher variables related to adjustment

Saxena (1979) found that under achievers had significantly poor adjustment in Home, Health and School areas and better adjustment t in general.

2.3 Parental influence and adjustment

Reynold and Gill (1994) investigated the relative influence of parental attitude and behaviors on scholastic and social adjustment and showed that parent's attitudinal factors contributed significant variances to differences in cognitive and social outcomes and to lesser degrees to change in social adjustment from grades 4-6. Behaviour measures had negligible influence on social adjustment outcomes.

2.4 Other variables related to Adjustment

After taking review of all these inventories and their findings, it was observed that there was significant difference between the adjustment of boys and girls in certain areas of adjustment viz. Home and Family, Health, Academic etc.

Significant difference was also observed in Urban and Rural boys and girls.

It was also observed that there was a positive correlation between Adjustment and Achievement and family background, Adjustment and parental influence; Intelligence and Adjustment.

Certain relationship was also observed between the self concept and adjustment.

Design of the study

3.1 Process of Standardization of an Inventory

Standardization of an Inventory includes following process :-

1. Selection of method
2. Sampling procedures
3. Construction of the inventory
4. Formulation of hypotheses
5. Statistical techniques

3.1.1 Selection of Method

The method of descriptive research i.e. the normative survey method is decided to apply. In Normative method, the method of survey appraisal study is adopted.

3.1.2 Sampling Procedure

In the present study random sampling method i.e. multi stage sampling procedure is adopted.

3.1.2.1 The Population

The population of the study is 10 th and 12 th standard students boys and girls from both the mediums Marathi medium and English medium from Greater Mumbai Region.

3.1.2.2 Selection of Sample

Multistage Sampling procedure is used and students are decided to select from different wards of the Greater Mumbai for pilot form and final form of the inventory. Total 300 students from 10 th and 12 th standard students are decided to select from pilot form and in all 1062 students of Secondary and Higher Secondary levels are decided to choose for final form from different schools. Experts sample of fifteen experts from the field of Psychology and Vocational guidance is also to be selected for expert's opinion.

Development / Preparation of the Adjustment Inventory

4.1 To see the Adjustment of Secondary and Higher Secondary students, the Adjustment Inventory had been constructed. The Inventory was constructed originally in Marathi and then translated in English.

In the preparation of Adjustment Inventory the first step was to construct the items.

4.2 Construction of the items

For each area number of items were constructed. Most of the items were constructed by the researcher and some items were collected from some Adjustment Inventories viz. Bell's Adjustment Inventory, Youth Adjustment Analyser etc..

4.3 The blue print

In the preliminary stage the "blue print" of the Inventory was prepared. The ideas were received from two sources - personal and documentary.

Personal sources included discussion with learned persons, experts in the field of psychology and education, while documentary sources included collection of ideas from published documents, social, psychological and educational research journal and periodicals.

4.4 Preparation of prepilot form of the inventory

In the initial stage of the inventory, the researcher decided which areas of adjustment were to be included in the inventory, since the inventory was based on Bell's Adjustment Inventory which includes the areas Home, Health, Social, Emotional; the researcher decided to include, in addition the areas viz. Academic, Peer relation and Self concept along with original area. The social area was further divided into Social and Non social, Aggressive and Submissive and the Peer relation area was further divided into two parts: Peer relation with same sex and peer relation with opposite sex.

Two forms of the inventory, each of containing 403 and 394 number of items respectively. In one form yes/no type items were constructed and in other form multiple choice items were constructed. Both of these forms were administered on 45 students from secondary and higher secondary levels.

4.5 Administrative prepilot form

The sample selected randomly for prepilot/trial form was of 24 students from secondary levels. The boys were 14 and the girls were 10. The sample of 12 boys and 9 girls was selected form higher secondary group, thus making the total sample of 45 from both the groups. The Prepilot form was administered to this sample.

4.6 Preparation of pilot form of the study

The pilot form of the study was prepared on the basis of results obtained from trial form. Totally 258 multiple choice items were selected for pilot form. Item analysis was carried out to prepare the final form of the inventory. The pilot form was administered to 300 students from secondary and higher secondary levels.

4.7 Administration of pilot form

Sample of 300 students which consists of 81 boys and 70 girls from secondary level and 79 boys and 70 girls from Higher Secondary levels was selected for administering pilot form of the adjustment of inventory. Item analysis was carried out with this sample and final form of the inventory was prepared.

4.8 Preparation of final form of the study

After items analysis final form of 130 multiple choice items was prepared. The number of items in each of the areas of adjustment were Self concept (10), Home (20), Social (20), Emotional (20), Academic (20), Peer relation (20). Two forms English and Marathi of the Inventory were prepared. There forms were administered to 1062 randomly selected students from secondary and Higher secondary levels.

4.9 Administration of final form of the inventory

The final form of the test was administered over 1062 students from secondary and Higher secondary levels and sexwise, mediumwise and standarwise norms were established on this sample.

4.10 Preparation of answer sheet

Separate answer sheets were prepared for both of the forms of inventory viz. English and Marathi. Each answer sheets was consisted of four pages. The front page was kept for personal data sheet and in rest of the pages four options viz. Always, Often, Sometimes and Never were provided. The circles were provided under these options for marking the correct response given by the students.

4.11 Preparation of key and scoring procedure

No separate key was prepared for this inventory. As already mentioned, the nature of items was multiple choice and four options were provided viz. always, often, sometime and never. Certain weightage was give to each of the options given above e.g. for always the weightage give was 4, for often 3, for sometimes 2 and for never 1, thus making the total weightage of each of the items 10. While scoring the option selected by the candidate was multiplied by predefined weight age and finally options with weightages were counted for that particular area of adjustment. Thus total score of each of the areas and for total adjustment was calculated.

4.12 Fixing the time limit for the Inventory

The average of average time taken by first five and last five students was calculated after administering the pilot form to the student. The final timing was fixed by calculating the actual time taken for 130 items included in final form and it worked out 30 minutes.

Standaradization Procedures

5.1 The main features of standardized test are

1) Objectivity 2) Validity 3) Reliability 4) Norms

5.1.1 Objectivity

The items constructed in the final form; pilot and prepilot forms were all objective type items.

5.1.2 Validity

The item validity of each of this items were determined by the items analysis conducted for pilot form of the inventory. The discriminative index of each of the items of the inventory was calculated by biserial coefficient of correlation and contingency coefficient of correlation.

The pilot form of the inventory was also given to the experts in the field of vocational guidance ad counseling and the field of vocational guidance and counseling and the field of psychology.

After taking into consideration expert's opinion and discriminative index of the items, the item was included in the final form of the inventory.

The validity of four areas Home, Social and Emotional was also calculated against Bell' Adjustment Inventory.

5.1.3 Reliability

The reliability of all the sub areas of the Adjustment Inventory was calculated by split half method and by the method of Kuder and Richardson's formula. The values of reliability were as follows.

Sr. No.	Areas of adjustment inventory	Reliability of Split half method	Reliability by K. R. Formula
1	Home	.71	.90
2	Self concept	.74	.64
3.	Health	.69	.72
4.	Social	.74	.99
5	Emotional	.68	.72
6.	Academic	.69	.73
7a	Peer relation (Same sex)	.72	.69
7b	Peer relation (Opposite sex)	.72	.73
8	Whole test	.77	.94

5.1.4 Norms

The percentile and stanine norms were established on each of the groups viz. 10t^h standard English medium groups, 12th standard English and Marathi medium groups and Corporation groups in which the medium was Marathi. The separate norms for 10th standard students and 12th standards students was established. The combined norms for total sample i.e. students from secondary and higher secondary levels were also established.

Descriptive norms were also established on five point scale i.e. Very good, Good, Average, Unsatisfactory and Very unsatisfactory for all the areas except Social area. For Social are th scales were Very social, Social, Average, Non social, Very submissive for aggressive area.

Analysis of data

6.1 The item analysis of pilot form was carried out and discriminative index of each of the item was calculated, from pilot form 130 items were selected in final form. The data was processed tabulated in a frequency distribution tables and the measure of central tendency i.e. mean was calculated for each of the area and groups. The measures of variability i.e. standard deviation, range and variance were also calculated for each of the groups and each of the areas of adjustment. The values of critical rations viz. 't' ration were also calculated for 10th standard Marathi medium and English medium boys as well as girls, 12th standard English medium boys and girls, as well as Marathi medium boys and girls 10th standard Corporation boys and girls and 10th standard English medium and Marathi medium students from Government aided private schools. The inter correlations between different areas of adjustments were also calculated. The percentile and stanine points were calculated for established norms for each of the groups from secondary and Higher secondary levels and for both English and Marathi medium boys and girls were calculated.

Table - 1

Statistical measures for total nos. of Xth and XIIth std. Students and Total nos. of corporation students

Fields → Measures ↓		Home	Self Concept	Health	Social	Non Social	Aggre-ssive	submi-ssive	Emoti-onal	Academic	Peer relt. Same sex	Peer relt. Opp. sex	Total	N
Mean	A	29.08	28.52	32.98	25.31	10.14	7.40	3.26	39.04	35.01	16.54	16.30	243.56	500
	B	25.64	28.93	29.29	24.77	9.87	7.54	3.60	35.55	34.17	16.69	16.03	232.13	488
	C	26.83	29.89	31.41	25.04	10.19	7.45	3.37	37.71	34.80	16.21	17.24	240.14	528
Standard deviation	A	8.35	6.34	31.41	5.34	2.85	2.16	1.41	9.72	9.74	4.66	5.72	38.00	500
	B	6.72	5.60	8.23	5.36	2.69	2.16	2.16	9.38	8.73	4.98	5.20	230.41	488
	C	8.04	6.07	7.39	5.66	3.00	2.22	1.40	10.07	9.26	5.46	5.98	35.44	528
Variance	A	69.68	40.25	67.70	28.51	8.11	4.67	1.38	94.48	94.76	23.62	32.76	1512.95	500
	B	45.14	31.34	39.85	27.67	7.24	4.67	1.95	87.97	76.12	24,84	27.00	1316.88	488
	C	64.70	36.49	54.56	32.05	9.01	4.91	1.97	101.35	85.76	29.37	35.73	1256.09	528
Standard error	A	0.37	0.28	0.37	0.24	0.13	0.10	0.06	0.44	0.44	0.22	0.26	1.74	500
	B	0.30	0.25	0.29	0.24	0.12	0.10	0.06	0.43	0.40	0.23	0.24	1.47	488
	C	0.35	0.26	0.32	0.25	0.13	0.10	0.06	0.44	0.40	0.24	0.26	1.58	528
Range	A	63.00	40.00	73.00	36.00	20.00	12.00	8.00	72.00	80.00	39.00	40.00	411.60	500
	B	42.50	40.00	68.00	36.00	23.00	12.00	8.00	72.00	75.00	37.00	36.00	365.50	488
	C	47.50	40.00	76.00	36.00	24.00	12.00	8.00	70.00	64.00	38.00	37.00	345.00	528
t value N1 = 500 N2 = 488	A	7.14	1.07	7.90	1.60	1.00	3.57	1.19	5.74	1.42	0.47	0.77	5.02	
	B													
	C													
f value N1=528 N2=488	A	2.55	2.63	4.87	0.80	1.27	0.66	2.58	3.54	1.11	1.48	3.45	3.70	
	B													
	C													
Level of Sing.	500/488	0.01		0.01			0.01		0.01				0.01	
	528/488	0.05	0.05	0.01				0.01	0.01			0.01	0.01	

6. Conclusions

Sexwise comparison of 10th and 12th standard students from both the mediums revealed that

6.1 Boys had more home problems than girls (.01 level).

6.2 Girls had more health problems than boys (.05 level).

6.3 Girls were found more emotional than boys (.01 level).

6.4 Opposite sex peer relation problems were more in boys than girls (.01 level).

6.5 Boys were more aggressive than girls (.01 level).

6.6 Boys were more social than girls (.05 level).

The null hypotheses were rejected in these cases at .05 and .01 levels of significance.

The mediumwise comparison of 10^{th} standard and 12^{th} standard students revealed that.

6.7 The self concept of English medium students was more strong than Marathi medium student (.01 level).

6.8 English medium students were more aggeessive than Marathi medium students. (.05 level).

6.9 The Marathi medium students were more social than English medium students.

6.10 The academic problems were found more with English medium students as compared with Marathi medium students.

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4

Efficacy of Models of Teaching for Improving Concept Attainment, Memory and Self-Assertiveness of Slow Learners.

By Dr. Ms. Smita Phatak

Introduction

Education of the child involves the process of learning and teaching. Education is a rational enterprise that needs to be evaluated continually to make it more efficient and effective.

A teaching situation necessarily involves the teacher, learner(s) and the teaching learning environment. Perhaps the most difficult of classroom organization is dealing with individual differences. Students have various traits, capabilities, aptitudes and skills which requires teachers to provide an appropriate level of instruction. In a classroom, children are so distributed that majority of them may be classified as average or normal. There are some others who deviate intellectually, physically and socially from normal children. Such children require special educational inputs.

In education, we group children of like characteristics for instructional purposes. [1]Kirk and Gallagher (1986) made the following groups that are typical for exceptional children.

(i) Intellectual differences, including children who are intellectually superior and children who are slow to learn.

(ii) Sensory differences, including children with auditory or visual impairments.

(iii) Communication differences, including children with learning disabilities or speech and language impairment.

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[1] **Kirk, Sammel.A & Gallagher, J.J. (1986) Educating Exceptional Children.** Boston : Houghton - Mifflin Company.

(iv) Physical differences including children with non-sensory handicaps that impede mobility and physical vitality.

(v) Multiple and severe problems including children with combinations of impairments (cerebral palsy, mental retardation, deafness and blindness)

The slow learners have an IQ in the range 70-90 and are also referred to as 'dull' or 'backward'. [2]Burt (1937) has pointed out that the term 'backward' or 'slow learner' indicates children who are unable to cope with the work normally expected of their age group. Slow learners are capable of achieving moderate degree of academic success though at a slower rate than the average child.

Thus there is a necessity to provide adequate and appropriate educational experiences for the slow learners in the cognitive, affective and psychomotor domain to enable them to cope in the regular class. Models of Teaching have great potentiality for achieving this goal of education.

Models of Teaching are specific instructional strategies designed to achieve specific instructional goals. According to [3]Joyce and Weil (1985) "A Model of Teaching is a plan or a pattern that can be used to shape curriculum, to design instructional materials and to guide teachers in the classroom." the most important aim of any Model of Teaching is to improve instructional effectiveness in an interactive atmosphere.

Slow learners have more problems than normal children with concept clarity, memory, self-assertiveness, interpersonal relationships and feelings of self-worth. Concept Attainment Model (CAM) could help slow learners to develop concepts efficiently and effectively. A Memory Training Model (MTM) could assist them i developing memory skills and Assertiveness Training Model (ATM) would train them to handle interpersonal difficulties thereby making them assertive and developing in them feelings of self-worth. Thus using an integrated model combining CAM, MTM and ATM could augment education of slow learners.

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[2] **Burt, C. (1946) The Backward Child.** London : University of London Press

[3] **Joyce, B. & Weil, M. (1985) Models of Teaching .** New Delhi : Prentice - Hall of India Pvt. Ltd.

Rationale Of The Study

Education of children and young persons with physical and intellectual impairment remained a forgotten subject in the educational policy in India [4](Jangira, 1990). Special educational needs have received a lot of positive attention since the [5]National Policy on Education (1986). Research to overcome learning difficulties using individualized instruction, cooperative learning based approach, peer modeling, adaptive instructional material, teaching aids and parental support have been experimented. However no research study using Models of Teaching for helping slow learners to cope was found.

Since slow learners constitute a considerable percentage (almost 18%) of student population they cannot be ignored. According to [6]Tansley and Gulliford (1962) "there is a need for further investigation into the learning, thinking and adjustment of slow learners so that teaching methods can be precisely planned to suit their needs."

Research on effective use of Models of Teaching has been conducted for children in mainstream schools but no research regarding the use of Models of Teaching for slow learners has been done. [7]Singh and Jaimini (1997) support this by saying "There is scope for studying the efficacy of teaching strategies for learners with special educational needs such as underachievers gifted and handicapped." They further supplement this view and say that "There is need for designig and conducting research to study the effectiveness of using two or three models of teaching in an integrated manner in a classroom lesson for different subjects."

Thus it was felt that judicious use of the Concept Attainment Model; Memory Training Model and Assertiveness Training Model would assist slow learners in improving conceptual clarity, memory and interpersonal communication skills.

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[4] **Jangira, N.K. (1990) Special Education : Emerging Perspectives.** New Delhi : NCTE Bulletin Vol. 2.

[5] **Ministry of HRD. (1986a) National Pollcy on Education - 1986. New Delhi :** Govt. of India.

[6] **Tansley, R.D. & Gulliford, R (1980) The Educaton of Slow Learnig Children .** London : Routledge & Kagan Paul

[7] **Jaimini & Singh (1997) Fifth Survey of Reserarch in Education.** 1988-92. Trend Reports, Volumn 1. New Delhi, National Council of Educational Research & Training (N.C.E.R.T)

Objectives Of The Study :

1. To study the effectiveness of Concept Attainment Model (CAM) with reference to achievement in concepts of slow learners.
2. To study the effectiveness of Memory Model in developing Memory Sklls of slow learners as tested on an objective type achievement test in spellings.
3. To study the effectiveness of using Assertiveness Training Model to train slow learners in handling their inter personal difficulties as indicated through predetermined behavioral changes.
4. To find the relationship between the concept Attainment Model (CAM) Memory Training Model (MTM) and Assertiveness Training Model (ATM).
5. To develop an Integrated Model (IM) for training slow learners in concept attainment, memory and assertiveness skills.

Design Of The Study

One Group Pre-Test and Post-Test design was the experimental design chosen for the study. The study was supplemented by individual case studies.

Sample

The study group consisted of thirty students from a special school in the age group 12-15 years with an IQ between 70 to 90.

Tools : The following tools were used for the study :

	Tools	**Developed by**
(i)	Raven's Standard Progressive Matrices Set A, B, C, D, E	
(ii)	Concept Attainment Model	Joyce & Weil (1985)
(iii)	Memory Training Model	
(iv)	Assertiveness Training Model	
(v)	Achievement test of Basic Concepts in English Grammar	Researcher
(vi)	Test of spellings	Schonell
	Checklist of Assertiveness Skills	Researcher

Procedure

1. Development of Tools

Achievement Test of Basic Concepts in English Grammar based on Minimum Levels of Learning (MLL) was constructed and developed by the researcher following the usual steps such as planning the test, try out and item analysis.

The researcher prepared a checklist of observable behaviors. Verbal and non-verbal behaviors were included in the checklist.

2. Pilot study

A pilot study was conducted to test the validity of the tools to be used in the research study. The pilot study served as a preliminary trial for the try out and modification of the tools. The following tools were tried out in the pilot study.

	Tools	Developed by
(i)	Concept Attainment Model	Joyce & Weil (1985)
(ii)	Memory Training Model	
(iii)	Assertiveness Training Model	
(iv)	Spelling test used to test the Memory skills	Schonell
(v)	Achievement Test of Basic Concepts in English Grammar	Reserarcher

The following modifications were made in the syntax of CAM, MTM and ATM respectively.

(1) Modified syntax of CAM

Phase three of the syntax given by Joyce and Weil (1985) was eliminated as the sample was of slow learners and they were unable to do analysis of thinking efficiently. The Modified syntax of the Reception Concept Attainment Model of Teaching is as follows :

Modified syntax of Reception Model of Concept Attainment

PHASE ONE :	PHASE TWO
PRESENTATION OF DATA AND TESTING ATTAINMENT OF IDENTIFICATION OF CONCEPT	
Teacher presents labeled examples. Students compare attributes in Positive and negative examples. Teacher helps students identify the essential attributes. Students state definition according to the essential attributes.	Students identify additional unlabeled examples as yes or no. Teacher confirms hypothesis, names concept and restates definition according to essential attributes. Students generate examples

(2) Modified syntax of Memory Training Model

Modifications in the syntax as given by Joyce and Weil (1985) were made. Phase four from the syntax given by Joyce and Weil was deleted. Students being slow learners were not able to efficiently do "reflecting". The modified syntax for the MTM is as follows.

Modified Syntax of Memory Model

PHASE ONE :	PHASE TWO
ATTENDING TO THE MATERIAL	DEVELOPING CONNECTIONS
Use techniques of underlining and listing	Make material familiar and develop connections using key word and substitute word and link system techniques.
PHASE THREE : EXPANDING SENSORY IMAGES	
Use techniques of ridiculous associations and exaggeration. Revise images.	

(3) Modified Syntax of Assertiveness Training Model

Only verbal and non-verbal situations were used for assertiveness training. Complex situations were eliminated considering the limitations of age and intellectual level of the sample. Thus appropriate modifications in the syntax for the ATM as given by Joyce and Weil (1985) were made.

In phase three all the students in the sample group were observers and none were role-players and phase five that is transfer to real life situations was eliminated.

Modified Syntax of the Assertiveness Training Model

PHASE ONE :	PHASE TWO
IDENTIFYING TARGET BEHAVIORS	SETTING PRIORITIES FOR SITUATIONS AND BEHAVIORS
PHASE THREE :	PHASE FOUR :
ENACTING THE SITUATION	REENACTMENTS
Instruct observers Enact with feelings suppressed and nonassertive behavior Discuss components of non-assertiveness and validity of enactment. Enact again with feelings. Discuss enactment, especially component of Assertiveness. Model assertive behavior, if necessary.	Reenact situation showing several assertive possibilities. Discuss the reenactment. Practice

Based on the CAM, MTM and ATM an Integrated Model (IM) was tried out The procedure for the same is as follows :

1. Teacher presents labelled positive and negative examples.
2. Students compare attributes in the given examples with the help of the teacher.
3. Teacher helps students to identify the essential attributes.
4. Teacher uses the technique of listing to help students to remember the attributes.
5. Using the link system technique teacher writes the definition based on the attributes.

6. Teacher underlines the key words and asks students to repeat the definition.
7. Teacher uses the techniques association and imagery to help students to remember the attributes and definition of the concept.
8. Students identify additional unlabelled examples of the concept.
9. Students generate their own examples.
10. Teacher monitors the identified ATM behaviors throughout the teaching learning process.

Findings And Interpretation

O_1: To study the effectiveness of Concept Attainement Model (CAM) with reference to achievement in concepts of slow learners.

H_1: There is no significant difference between the pre-test and post-test mean scores on achievement in concepts.

Table 1 indicates that there is significant difference between the pre-test and post-test mean scores after training using CAM. This has been tested by using the Wilcozon signed rank test. The Wilcoxon T statistic (computed) is smaller than the critical value in the table at 0.01 level of significance. Therefore hypothesis H_1 is rejected.

Table - 1 Analysis of Pre-test and Post-test scores to test the efficacy of CAM and MTM.

Name of the test for CAM	**n**	**Mean**	**S.D.**	**Calculated Wilcoxon T**
Pre-test	30	17	10.2	0*
Post-test	30	25	10.6	
Name of the test for CAM	n	Mean	S.D.	Calculated Wilcoxon T
Pre-test	30	8	5	0*
Post-test	30	13	6.05	

Note* : Significant at 0.01 level of significance

O_2 : To study the effectiveness of Memory Training Model (MTM) in developing Memory Skills of slow learners as tested on an objective type achievement test in spellings.

H_2 : There is no significant difference between pretest and posttest scores on achievement in spellings test for Memory Skills.

Table 1 indicates that there is significant difference between the pre-test and post-test mean scores after training using MTM. Using the Wilcoxon Signed Rank Test has tested this. The Wilcoxon T statistic (computed) is smaller than the critical value in the table at 0.01 level of significance. Therefore hypothesis H2 was rejected.

O_3 : To study the effectiveness of using Assertiveness Training Model (ATM) to train slow learners in handling their interpersonal difficulties as indicated through predetermined behavioral changes.

H_3 : There is no significant difference between pretest and posttest scores for Assertiveness Skills as observed using the checklist for observable behavior.

Using the method of weightages to compute the data, it was found that the behavioral changes took place as given in the following Table 2.

Table - 2 Changes occurred in observable behaviour after training using ATM

Observable behaviour	Average no. weeks taken to see change in observable behaviour after training using ATM	Standard deviation ( )
Posture	6-7 weeks	4.88
Gestures	6 weeks	3.87
Eye contact	7-8 weeks	3.93
Fluency	8-9 weeks	4.31
Reduced anxiety	7-8 weeks	4.66
Spontaneity	7-8 weeks	5.20
Confidence	7 weeks	4.83

Assertieness Skills were found to have improved significantly in the 6th week onwards, however it took almost 9 weeks to achieve fluency in the sample students. Therefore hypothesis H_3 was rejected.

O_4: To study the relationship between the Concept Attainment Model (CAM) and Memory Training Model (MTM)

H_4 : There is no correlation between posttest scores of CAM and posttest of MTM.

Table - 3 below indicates that there was significant positive correlation between scores of CAM and MTM (value of 'r' = 0.68).

Therefore hypothesis H_4 was rejected.

Table - 3 : Correlation coefficient 'r' between CAM and MTM

Correlation	**'r' value**	**Relationship**	**Hypothesis**
Between CAM and MTM	0.68•	Significant	H_4 rejected
Between CAM and MTM	-0.24	Not significant	H_5 retained
Between MTM and ATM	-0.39	Not significant	H_6 retained

O_5 : To study the relationship between the Concept Attainment Model (CAM) and Assertiveness Training Mode (ATM)

H_5: There is no correlation between post-test scores of CAM and post-test scores of ATM

Table-4 above indicates that there was weak negative correlation between scores of CAM and ATM (value of 'r' = -0.24).

Therefore hypothesis H_5 was retained.

O_6 : To study the relationship between the Memory Training Model (MTM) and Assertiveness Training Mode (ATM).

H_6 : There is no correlation between posttest scores of MTM and posttest scores of ATM.

Table - 4 above indicates that there was weak negative correlation between scores of CAM and ATM (value of 'r' = -0.39).

Therefore hypothesis H_6 was retained.

Findings Based On Qualitative Analysis

Individual case study resulted in the following findings :

1. Sociol - Economic Status (SES) : was not a significant factor for academic backwardness in the sample group. 94% children from the sample group came from households with an annual income more than forty thousand rupees.
2. Parents Education : The education of parents was not a significant factor for academic backwardness in the sample group. Most parents were educated till the graduate level, thus this is contrary to the findings that the parents of slow learners are generally illiterate or not much educated.
3. Early Failures : Only 3% of the students in the sample group had not repeated grades as a result of academic failure. 77% of the study group had repeated grades either in the fourth, fifth or sixth grade. If appropriate remedial measures were taken in the earlier grades, academic backwardness could have been arrested or reduced.
4. Medical Factors : These could have contributed to the academic backwardness in the sample group. 10% exhibited late milestones, 13% suffered from mild sensory and physical handicaps, 3% had difficulty in speech while 20% had neuromotor handicaps mainly epilepsy. However 54% of the sample group did not exhibit any of the above conditions and showed normal development. Physical sensory and neuromotor disabilities could have contributed significantly in hampering their intellectual development.

Conclusions :

It can be concluded from the study that :

1. CAM is an effective teaching strategy for acquiring concepts in English grammar for slow learners. They are able to classify and use known facts in new situations. Thus problem solving and generalization is facilitated.
2. The Memory Training Model is effective in developing memory skills of slow learners. Organizing information to be learnt, linking information to visual representation, making information vivid, and practice, were the skills that were found to be useful to assist memorization.

3. The Assertiveness Training Model was effectively used to facilitate interpersonal communication thereby reducing stress and anxiety in social situations. Modeling and rehearsing techniques were found to be effective in making the students assertive.
4. There was significant relationship between CAM and MTM. Thus teaching concepts using CAM was facilitated in acquiring memory skills using MTM.
5. There was no impact of CAM or MTM in bringing abut significant changes in self-assertive behavior of slow learners.
6. Memory Training Model did not facilitate any behavioral change so as to make students self-assertive. Thus training given using MTM had no effect on improvement in assertiveness skills using ATM.
7. As per the qualitative analysis of the case studies socio-economic status and parents education do not contribute to the academic backwardness. However, medical factors which include delayed milestones due to prenatal, perinatal and postnatal problems, sensory and physical handicaps, neuromotor dysfunction (epilepsy) as well as speech disorders contribute significantly in hampering intellectual development. Thus these factors could be some of the reasons for academic backwardness.
8. An Integrated Model (IM) which integrates the CAM, MTM and ATM can be used as an effective teaching strategy for slow learners.

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5

Peoples Participation In Educational Development In Rural Areas

- A Study -

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Preface

1. As per article 45 of the Indian constitution, though education in general is the State responsibility, no State can fulfil its targets in the field without local participation. We cannot expect the satisfactory educational development unless there is cooperation of the local community and local bodies. So, on the basis of my study I came to the conclusion that if the suitable work-plan is prepared and implemented the same properly, the willagers and the local bodies can play very important role in educational development.

2. Statement of the Problem :

We cannot think of educational development or the school development without material and moral support of the local people. Peoples participation is the must factor at least in rural areas where the schools have to face academic as well as physical problems.

Especially in small villages having population below 500, schools have to face so many problems. But on the other side, the school teacher in such small village can harness the cooperation of the local people. He can know each and every person by name, he can judge the psychology of the small community and can create interest among people which is required for school development.

It is necessary to study what type of participation is proved helpful in school development and other educational institutions in rural areas. It is also necessary to study in what way the people can participate in rural areas. What is the teacher's role in this respect? What methods are to be used for this purpose? This type of study will be very useful to schools and to the state Governments, to seek further participation of the local people in the educational development.

2. Objectives :

The major objectives are give below.

1) To study the ways of local participation in educational development in rural areas.
2) To study the meeds of schools in rural area.
3) To study the attitude of parents and the public towards the local schools in rural areas.
4) To study the school and the community relations in rural areas.
5) To suggest the ways and methods of peoples participation in the educational development, especially in rural areas.
6) To recommend the work plan for such participation.

3. Hypothesis :

The main hypothesis is that if the school can function as the community centre and provide services to the local community, the people or the local community comes forward to co-operate for school development. It is just like a give and take process.

When the school renders the services needed by the local people, the people in tern render the possible services for the school also. Unfortunately many schools in the villages are not aware how to render the services to the local community and hence they are found to e isolated from the villages. If we can give the plan to such schools, they will be able to play their role officiently and will be able to harness the co-operation from the village. On this background the study will be very useful to the schools in villages and also to the education department of the state.

4. Methodology :

I have selected a random sample of 50 schools in small villages from the Kolhapur District. It is the general experience that the schools in small villages have to face many problems-both academic and physical than the schools in urban areas. So, I have selected such villages having population not more than 3,000/-.

There are 12 Talukas in the Kolhapur district. On an avarange 4 villages have been selected for detailed study. I have personally visited most of the schools for on the spot study. I have discussed the problem with the teachers, local leader's and the dignitaries of the public institution like Gram-panchayat, co-operative Society ad such other agencies involved in development of the particular village. The suitable printed questionnaire was supplied to all the schools selected for the study from which I could get the required date for this investigation.

I have also discussed the issue with the teacher educators at primary and secondary level, social workers from rural areas, Education Officers of the Taluka at district level and with some educationalists in the State. I am really happy to mention here that I am benefited a lot from the discussion with those people.

5. Tools Used In The Study :

The printed questionnaire is used for collecting the detailed information form the schools.

1. The strength of the school.
2. School building
3. Play - ground.
4. Furniture.
5. Teaching aids.
6. Text-books and other material required for the students. etc.

The detailed information on these points is collected by me. I have also collected the information regarding the extent of co-operation in this respect. So I came to know to what extent the local community has participated in providing physical facilities mentioned above and to what extent they have helped in development process of the respective schools. I shall discuss this point in detail later on.

I have collected the information from the schools inrespect of the services rendered by the school to the local community. In what way the schools have given the service or giving the services to the community was the aim of my study. The following service items were given in the questionnaire.

Adult education, cultural activities, health guidance, kitchen gardening and farming, postal transactions, Library facility, safai, exhibition, constructions of approach reads, importance of boys and girls education, problem of untouchability were the main items put before the schools for their reply. The concerned items were tickmarked by the concerned schools from which I came to know the extent of services rendered by the schools in villages.

The printed schedule of opinions was used to collect the opinions of the teachers, teacher educatiors, social workers and the education lists in the state. I could get lot of information and guidance from these people. I have visited the required number of schools and villages to make on the spot study of the problem. I shall deal these items one by one in this report.

6. Community Participation :

The Schools in urban area charge heavy fees and they can collect donations from the parents for their school requirements. They can also contact the rich people and doners for donations and can construct the required school building, laboratory, library, hostel etc. for the school. But in rural area, the situation is found to be quite different. Most of the villagers are poor. They lead their life from hand to mouth. They cannot even bear the expenditure of their own children for education. Though they are generous minded people, they cannot afford to pay required financial aid to the local school for its development. I have visited more than 50 primary schools in small village and I found that the people in such village have helped the schools mostly in kind than in cash. Some say that the villagers are not aware of the importance of education and hence they are not eager to sent their children to the schools. But my experience is quite different one. During the post-independence period the villagers have become alert and they do know the importance of education. They do know that the well educated people are well established and they are exploiting the benefits of various schemes. But as they are engrossed for their livelihood, they seem to be helpless in sending their children to the schools and providing required material for them. This is the general condition of the poor people in small villages. I shall deal the problem in detail on the basis of my study made in this investigation.

My study in the field shows that though the people in small villages are poor, they know the importance of education and educating their children. I have found that the people in so villages selected for detailed study have found to be participated in educational development in following ways : -

1. Construction of School buildings.
2. Providing play grounds for the schools.
3. Providing furniture.
4. Providing teaching aids, utensils maps etc.
5. Suppling textbooks for poor children.
6. Providing cloths for poor boys milk for children, and
7. Free house for the teachers.

It is found that 40 villages, though they were unable to contribute in cash, they compensated their contribution of 25% in the following ways :

1) Shramadan i.e. free Labour.
2) Donating stones, wood and other material available in the village.
3) Donating of required land pieces for school buildings and playgrounds.
4) Levelling of the land.
5) Giving required land in very shape state or at nominal rate and
6) Providing Gram Panchayat land for school building and playgrounds.

7. Participation Of Local Bodies :

Local bodies like Zilla Parishad, Panchayat Samiti, Gram Panchayat, Youth Clubs and cooperative Society have played very important role in educational development programme in the past and also they are playing the same role at present. Education Commission (19645-66) has discussed the issue in its report Chapter XVIII in detail and recommended that the participation of the local community and the local bodies mentioned above is the must thing. The commission has referred the reports of the following two committees : -

(1) Shri G. B. Kher Committee and
(2) Shri Balawantrao Metha Committee.

The first committee i.e. Kher committee said : "Although aware of the frequent maladministration of education by local bodies and particularly of the harassment which was often caused to teachers, it felt that these weaknesses could be overcome through appropriate measures and recommended that the local bodies should be associated with the administration of primary education, with adequate safeguards to protect the interests of teachers, because ‘ such associations would further the cause of mass education and bring the goal of universal education near.” 1

The Mehta committee went one step ahead ad recommended that ‘Strong local bodies should be created in rural areas and vested with adequate authority to administer all developmental programmes, including primary education.

8. Role of The Teacher :

It is the fact that the school teacher is the key factor in the educational development process. The extent of local participation depends upon the performance of the teacher. Shri E.A. Pires in his book titled ‘The Rural primary Teacher’ has made the remark -

“The rural teacher should be willing to participate actively in any worthwhile understanding in the community. To be able to do so, he should live in the community and become will acquainted with its members. He should sink roots deep into the community, which should become for him laboratory for the study of rural life. He should regard his school as the vital part of the developing life of the community”.

“The wise teacher, noting this relationship, will organize the scope and importance of his work and will so organize his school work and his activities in the community that school and the community become complementary factors, cooperating in the education of the child and the adult.”3.

The efficient school teacher interested in particular school and the village can play his role effectively and can serve the purpose of the school and the community. He can harness the co-operation of the local people for the educational development in the particular village.

9. Methods of Peoples ‘Participation’ :

As I have explained above the extent of peoples participation is mainly depends upon the teachers performance in the school and in the community. If he proves to be the friend, philosopher and guide of the local community, he can very easily harness the cooperation and participation in educational development programme. He must be of the opinion that he is for the school and the community. He should not remain in isolation. The people must feel that the teacher is one of them and he is the part of parcel of all educational and social activities in the particular village. The teacher should take the school into the community through various services needed by the local community. He must take the lead in this respect as he is the enlightened and educated person in the small village, he can render valuable services. The work-plan for the school is given below : -

Work - Plan For School :

(1) Adult education.
(2) Cultural and entertainment activities.
(3) Health guidance.
(4) Farming guidance
(5) Eradication of untouchablity
(6) Creation of unity among people.
(7) guidance for village development.
(8) Educational guidance and creation of interest.
(9) Postal information.
(10) Encouragement to girls education.
(11) Guidance for establishment of cooperative society, dairy and poltry.
(12) Library service.
(13) Arranging exhibitions.
(14) Construction of approach roads.
(15) Arranging sports and games etc.

I have listed the above activities on the basis of my study of 50 villages where I found that these schools are rendering such types of services to the local community where in turn that the villages are rendering the possible and required services to the local school.

10. School And The Community :

Much have been said regarding the school community relations in many reports and books in the past. I shall deal the issue in respect of people's participation in small villages only. School is one of the social institutions which is the planned and stable source for the small village. As I have discussed earlier, the village school teacher is the master key in small village where he can play his role more effectively than in big village and in urban area. Shri E.A. Pires said, "His (Teachers) role will have to be that of coordinator, organizer and leader." 4. The teacher is the proper authority who can harness the co-operation of the local people as well as the local bodies in the village.

11. Work-Plan For School Improvement :

On the basis of my study in the investigation and the rich experience in the field I am submitting the Work-Plan for School Improvement which I am sure can be implemented at Taluka, Zilla or State level. It requires psychological approach for effective implementation of the plan. It needs individual level and mob level appeal from the higher authority. So I recommend the following committees at various level : -

I) District Level Committee :

1. Chairman - Zilla Parishad President.
2. Members (16) M.P.S., M.L.A.S., Collector, Z. P. members, Principals, Head-Masters, Teachers, Members of Panchayat Samitis.
3. Member Secretary - Chief Executive Officer Z.P.

II) Taluka Level Committee :

1. Chairman - Panchayat Samiti Chairman.
2. Members (10) Tahshildar, Panchayat Samiti members, Head-masters, teachers, Sarpanch etc.
3. Member Secreatary - Block Development Officer.

III) Village Level committee :

1. Chariman - Sarpanch of Gram Panchayat
2. Members (5) Chairman, Co-operative Society; Chairman, Cooperatie dairy; Member of Gram Panchayat etc.
3. Member Secretary - Head-Master of the local school.

N.B. Suitable changes can be made while forming the committees.

IV) School Improvement Year :

The state Government should declare that the specific year will be celebrated as school improvement year during which local people are requested to donate in cash or in kind for their primary schools in the interest of their children. Span of the year will be convenient for all to plan and implement it properly.

V) **Appeal Of Chief Minister And Education Minister :**

Printed appeal in the name of Chief Minister and Education Minister be issued to all offices of all departments, industries, Banks and all other agencies in the State. It should also be issued to all Zilla Parishadas, Panchayat Samities, Gram panchayats, Local bodies and all associations in the State. The appeal should be also addressed to all persons in the villages so that the favourable climate or atmosphere will be created.

My experience is that even the poor man if he is honored in the way from the top level through village level committee, he definitely participate in the programme. School requirements or the things to be donated, be included in the appeal as the suggestive list.

VI) **Publicity :**

The appeal mentioned above be published in all news papers magazines and also in the form of pamphlets for free distribution. Request may be made to publish it free of cost.

VII) **Audio-Visual Aids :**

Radio, Television and Documentary films should be used for this purpose. Announcements, talks and exhibits of good work in the field may be released through documentaries.

VIII) **Meetings :**

From State to village level meetings of the concerned people be arrange to discuss the ways and methods of implementing the programme. Such meeting will be useful for direct appeal from the higher authorities and coordination among various departments.

IX) **Prizes :**

Three prizes may be declared for three villages from each Taluka who will implement the programme efficiently. The committee nominated for this purpose will decide the numbers.

12. Results :

The work-plan for school improvement given in the report is not a new thing altogether. Some States like Tamilnadu and even some small villages have implemented such type of programme in their areas. I hope if the State Governments decide to implement the plan, it will help the State by various ways.

⁂

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6

Developing A Self-Study Package in Computer Education for Slow Learners

By Mrs. Mundhe Rajeshree Shriram

Introduction :

Education of the child involves the process of learning and teaching Education is a rational enterprise which needs to be evaluated continually to make it more effective and efficient.

A teaching situation necessarily involves the teacher, learner(s) and the teaching learning environment. Perhaps the most difficult of these three is the management of teaching learning environment. This depends on the effective classroom organization is dealing with individual differences. Students have various traits, capabilities, aptitudes and skills which requires teacher to provide an appropriate level of instruction.

In a classroom children are so distributed that majority of them may be classified as average or normal. There are some others who deviate intellectually, physically and socially from normal children. Such children require special education inputs and necessarily deviated teaching learning situations from that for the normal.

These children can be educated using special instructional methodology, instructional material, learning aids and equipment specific to special learning needs. Such children are referred to as exceptional children.

In education, we group children of like characteristics for instructional purpose. Kirk and Gallagher (1986) made the following grouping which are typical for exceptional children.

(i) Intellectual differences, including children who are intellectually superior and children who are slow to learn.

(ii) Sensory differences, including children with auditory or visual impairments.

(iii) Communication differences, including children with learning disabilities or speech and language impairment.

(iv) Physical differences including children with learning disability or speech and language impairment.

(v) Multiple and serve problems including children with combinations of impairments (cerebral palsy, mental retardation, deafness and blindness)

These differences are to such an extent that the child requires modification of school practices or special educational services to develop to its maximum level.

The slow learners are particularly of interest to the researcher as these children quite often escape the attention of teachers in the Indian situation with our overcrowded classrooms, rigid curriculum and teaching geared to the average student.

The slow learners have IQ in the range 70-90 and are also referred to as 'dull' or 'backward'. Burt (1937) has pointed out 'the term' 'backward' or 'slow learners' indicates children who are unable to cope up with the work normally expected of their age-group. Slow learners are capable of achieving moderate degree of academic success though at a slower rate than the average child.

Thus there is a necessity to provide adequate and appropriate educational experience for the slow learners in the cognitive, affective and psychomotor domain to enable them to cope in the regular class. Strength in education resides in the intelligent use of a variety of approaches and adapting them to students at different level of intellectual development.

Vocational Education is essential for slow learners. Computer education is one such area which could be useful to all students but more so as a vocation for slow learners.

Computer technology has great potential for assisting teachers in the delivery of quality instruction program for slow learner students. Computers provide necessary technology and when used appropriately, help teachers individualize instruction in the mainstreamed classroom. If computers are provided for the slow learner students they prove to be the best instructional tools for the teacher. With the help of computers teachers can meet the student's special needs more efficiently.

Computers in the classrooms for the slow learners can act the tutor as well as tool, for it can work as a teacher's aide and deliver the instructions to the students. This application is called computer-assisted instruction.

But one thing makes the computer training difficult for the slow learner students, that the computer teacher doesn't always know the proper methodology. This leads to a communication gap between the teacher and the student. To minimize this communication gap the video programs and printed modules, on computer education were made by the researcher.

Rationale Of The Study

Education of children and young persons with physical and intellectual impairment remained a forgotten subject in the educational policy inn India (Jangira, 1990). Special educational needs have received a lot of positive attention since the National Policy on Education -1986, brought it within the equal opportunity section. Research in Special Education for diagnostic- remedial approach to overcome learning difficulties, individualized instruction, cooperative learning based approach, peer modeling, adaptive instructional material, teaching aids and parental support have been experimented with and research studies enumerated in the Fourth Survey of Educational Research, (Buch, 1991). However no research study using self study package in computer education for slow learners was found in the Fifth Survey of Educational Research (Buch, 1997).

Slow learners constitute a considerable percentage (almost 18%) of the student population hence they cannot be ignored. This warrants a special instructional strategy for slow learners. According to Tansley and Guklliford (1965) "There is need for further investigation into learning, thinking and adjustment of slow learners so that teaching methods can be precisely planned to suit their needs."

Computer education is one of such area which could be useful to all students but more so as a vocation for slow learners. It would enable such marginalized students to work on their own with better efficiency or they could be employed in various government as well as non-governmental organizations.

In the present competitive society only higher education has become meaningless without any vocational component in it. At the same time we cannot forget those, who are not able to take even education after S.S.C. A number of slow learners are totally neglected in their secondary education, and for them higher education is not feasible. In this complex structure of society due to many interacting factors number of students who can not afford higher education or for whom it cannot be even a dream - is day by day increasing. For many different interacting factors the number of slow learners is increasing. Many of these slow learners really lack in the intellectual development, even then they are taking education at the secondary stage and many of them may not be able to complete their education up to S.S.C. Hence training of one of vocational trades as per S.S.C. syllabus has become inevitable in case of slow learners with the other subjects. In many of the schools 'computer training' is considered as the best suitable vocational trade in the present situation.

However, most of the teachers of computers find it difficult to communicate with such students. They are not aware of their difficulties and find it difficult to adopt their methods of instruction. Video has proved to be an intrinsically exciting medium of instruction for the slow learners. Golani, T.P. (1982) opined that the teaching aids were essential and useful in developing clear concepts and in stimulating learning. The students learned better when audio-visual aids were used and they also sustained more interest in the learning activity with audio visual aids than without them.

Kumar A. (1981) found out that the Multi Media method was more effective than either the programmed learning method or the expository method and that retention in learning by the multimedia method was higher than by the other methods.

It was also observed that there were various researchers and studies done for the normal children but there were hardly any studies on the slow learners students.

As seen form the fourth and fifth survey of educational research (Buch 1991 and 1997) there has been no research on slow learners as a group. Most of the research studies in special education have been confined to visually and hearing impaired, orthopedic and neuromuscular impaired and mentally retarded.

Through this study the researcher has made an attempt to prepare Printed modules and the videotaped lessons on computer education for the slow learners keeping in view that a video program on computer education would enable the students to learn computer at their own pace with lots of needed repetitions: All these programs have been undertaken to be presented in Marathi language.

Statement Of The Problem :

Developing a self-study package in computer education for slow learners

Operational Defination Of Key Terms :

1. Self Study Package : Printed material & Video Programs.
2. Computer Education : Course prescribed by S.S.C. Board for Vocational Course.
3. Slow Learners : Students having an IQ in the range of 70-90 and are generally unable to cope with the work normally expected of their age and grade level.

Objectives :

1) To develop self instructional package consisting of Video Programmes and Printed Material in the form of Modules, in Marathi.
2) To modify the package based on feedback from students, teachers and experts.
3) To test the effectiveness of the developed packaged by trying out on slow learners.

Hypotheses :

1) There is no significant difference between pre-test and post-test scores of students with slow learners in the video program and printed module on Introduction to Computers.
2) There is no significant difference between pre-test and post-test scores of students with slow learners in video program and printed module on DOS System.
3) There is no significant difference between pre-test and post-test scores of students with slow learners in video program and printed module on Wordstar.
4) There is no significant difference between pre-test and post - test scores of students with slow learners in video program and Printed module on Lotus.
5) There is no significant difference between pre-test and post-test scores of students with slow learners in video program and printed module on Foxbase/Foxpro.
6) There is no significant difference between pre-test and post-test scores of students with slow learners in video program and printed module on Introduction to Windows.

Assumption Of The Study :

During the training period using Video programs and printed modules for computer education, all other variables related to learning processes of students have been assumed to be stable and applicable equally to all.

Limitations Of The Study :

The Study was conducted on a voluntary group of slow learner students between the age-group of 15-20 years.

Though all efforts were made yet a large sample was not possible because of two things:

- ○ The group had to be a voluntary group.
- ○ There was a constraint of a particular age group.

Significance Of The Study :

A slow leaner is unable to cope satisfactorily with the usual educational demands of ordinary school curriculum. Although his limited capacities may prevent him from reaching high levels of achievement, there is much that he can and learn within his limits. We must ensure the use of appropriate instructional strategies that will encourage total growth and are geared to the special needs and limitations of these children to enable them to function normality.

This research study is an attempt to provide a meaningful and practical instructional strategy for slow learners.

Computer education is a vocation where children with various slow learners can be trained to cope, if the instructions are modified to suit their needs. It is also a subject which students of class tenth can opt for. Students with slow learners would be able to better handle Computer Education in place of Language or Mathematics as a number of studies of mathematical attainment in deaf people have demonstrated that they lag behind their hearing contemporaries.

However good Computer training programs on commercial basis are very expensive and beyond the reach of most of the hearing impaired youth. Also the language used by the instructors is very technical and mostly with theory, without much of practice. Most of the computer instructors don't know sign-language.

Video programs on computer education using repetitions, slow pace (as per the requirements of the slow learner children.) could be used by schools to train students in groups or they could be lent out to students who want to work individually.

The video recorded lessons are the most widely used materials for, teaching the slow learners students in countries like, U.S.K., U.K. Germany and other western countries. But their use in India is limited. By preparing the video program on computer education regular language, the slow learners students can be helped in learning computers according to his or her individual capability may find the video program helpful in making the students learn computers accordingly.

Since the programs would be prepared to meet the specific needs of students with slow learners, the package would contribute to a much-felt need in this area.

Design Of The Study

The study has experimental design with groups matched for age and IQ. This is a design of two factor variable, one being the 4 Teaching learning methodologies and other is six components of computer education syllabus of Std. X.

Sample

The study group consisted of hundred students from a special school and other schools in the age group 15-20 years with an IQ between 70-90

Tools

The following tools were used for the study :

1. Raven's Standard Progressive Matrices Sets A,B,C,D, and E.	Developed by Raven (1960)
2. i) Printed Modules on Introduction to computers	Developed by the Researcher.
ii) Printed Modules on DOS	
iii) Printed Modules on Wordstar.	
iv) Printed Modules on Lotus	
v) Printed Modules on Foxbase	
vi) Printed Modules on Introduction of windows	

3. i) Video Programs on Introductions to computers	Developed by the Researcher.
ii) Video Programs on DOS	
iii) Video Programs on Wordstar.	
iv) Video Programs on Lotus.	
v) Video Programs on Foxbase.	
vi) Video Programs on Introduction of windows	
4. Check list of observable behaviours	Developed by the Researcher.
5. Pre-test & Post-test	

Development of Tools

1. Researcher prepared scripts for the computer training programmes which covered all the following aspects according to the syllabus.

a) Introduction to computer : Application and structure
b) DOS System
c) Introduction to Wordstar
d) Lotus
e) Foxbase
f) Introduction to windows

The scripts of 6 printed modules and 6 video programmes were then given to the experts in script writing and teachers giving compute training in schools and also in the private institutions.

Considering the suggestions of experts and teachers scripts were finalized and incorporate the suggestions then given for video recording to the professional experts in preparing video programmes.

Pilot Study

A pilot study was conducted for several purposes :

- To provide a trial run of the data collection approach
- To provide pilot data for testing the data analysis technique planned
- To modify the tools
- To give the investigator experience in working with the subject, administrating the tools and analyzing the research data.

The following tools were tried out in the pilot study

1. i) Printed Modules on Introduction to computers	Developed by the Researcher.
ii) Printed Modules on DOS	
iii) Printed Modules on Wordstar.	
iv) Printed Modules on Lotus	
v) Printed Modules on Foxbase	
vi) Printed Modules on Introduction of windows	
2. i) Video Programs on Introduction to computers	Developed by the Researcher.
ii) Video Programs on DOS	
iii) Video Programs on Wordstar.	
iv) Video Programs on Lotus.	
v) Video Programs on Foxbase.	
vi) Video Programs on Introduction of windows	
3. Check list of observable behaviors	Developed by the Researcher.
4. Pre-test and Post-test	

Conducting Computer Classes For Slow Learners -

The researcher with the help of special teachers conducted the classes in computer education for the group of 25 students in Marathi language along with traditional method. The researcher with the help of the special features used to conduct the classes in computer education for the group of 75 slow learners in Marathi language along with the printed modules and aid of video programmes on computer education.

Black board, chalk, charts were the other aids, which were taken help of at the time of delivering the lectures on computers. Students sitting at their computers used to work individually as well as in groups. After they were taught in the class room about a particular topic in computers, on the following day they were given post-test on that topic. Thus in this way it took almost 24 days to conduct classes to teach computers through printed module to slow learners (25 students) and 24 days to conduct classes to teach computers through video programmes to slow learners (25 students) and also 24 days to conduct classes to teach computers through printed modules and video programmes to slow learners (25 students.)

Statistical Analysis

Under normal conditions we assume a null hypotheses that there is no significant difference between the scores of Pre-test and Post -test of students with slow learners. The focus of the study was to find out the difference between the pre-test and the post-test scores of the printed modules and video programmes on computer education for the slow learners impaired students. In order to find the difference between the pre-test and the post-test the 't' test was applied.

For analysis and interpretation of data the following statistical calculations were made :

- Calculation of the Mean of the data
- Computation of the Standard Deviation of the data
- Working out of the Standard Error
- Application of 't'-test to test the significance of the mean difference between the pre-test and the post-test
- Finally the significance of the t-value was checked at 0.01 level and 0.05 level

- Analysis of variance (ANOVA)
- Multiple comparison among difference of means in groups.

Analysis and Interpretation of Data

Experimental design used for the study is two factor variable. One variable is the four teaching, learning methodologies used to teach Syllabus of computer education for X standard. Second variable involved in the experiment is six components of the computer education syllabus of X standard.

T-Test results and analysis of variance (ANOVA) both have shown in general the differences in means are highly significant but which two groups differ significantly is difficult to conclude, Hence the one-way method -ANOVA statistical procedure - is used.

Keeping a component variable constant variance is carried out by considering pre and post test of all the groups. The differences in mean achievements of the different groups for all the six components are tested for 95% significant level using ANOVA Technique.

T-Test for deciding significance

(A) T-Test Table : -

Programs		G-1	G-2	G-3	G-4
Introduction to computer	MEAN	18.12	23.4	26.36	26.48
	STDEV	2.4	2.36	2.56	2.63
	t- VALUE	12.1	10.82	1	9.79
Level of Significance					
DOS	MEAN	16.68	17.24	23.24	23.84
	STDEV	2.46	5.48	1.24	0.82
	t- VALUE	5.88	2.18	6.49	5.78
WORDSTAR	MEAN	17.84	22.4	22.76	25.6
	STDEV	2.88	1.83	1.58	0.42
	t- VALUE	12.03	4.36	4.69	7.98

LOTUS			MEAN	16.28	21.44	22.32	24.24
			STDEV	2.59	2.51	1.89	0.53
			t- VALUE	8.46	4.35	5.36	6.45
FOXPRO			MEAN	13.64	20.44	22.48	27.56
			STDEV	3.02	3.22	1.78	1.81
			t- VALUE	8.43	3.48	4.58	9.19
INTRO. TO WINDOWS			MEAN	19.12	22	23	29.2
			STDEV	1.94	2.12	1.41	2.96
			t- VALUE	10.64	4.05	4.76	11.63

For all components of Computer Training observed 't' values in the table are greater than 't' values for. 95 confidence level of significance Hence 't' and observed mean difference are highly significant.

(B) Analysis of variance for testing experimental hypothesis - significance of differences among several means.

Interpretation of the period sample/test for all the six components

(F) value

Paired Differences

	Diff.in means of Pre &Post Mean			**95% Confidence Interval of the Difference**			
		Std. Deviation	**Std. Error Mean**	**Lower**	**Upper**	**t**	**F**
Pair 1 Introducation to Computer Post Test	4.42	2.70	0.27	4.96	3.88	16.363	66.49

	Diff.in means of Pre &Post Mean			95% Confidence Interval of the Difference			
		Std. Deviation	Std. Error Mean	Lower	Upper	t	F
Pair 2 DOS Pre-Test DOS Post Test	2.96	2.05	0.20	3.37	2.55	14.443	59.78
Pair 3 Word Pre Test Word Post Test	3.41	2.11	0.21	3.83	2.99	16.172	85.49
Pair 4 Lotus Pre Test Lotus Post Test	3.73	2.56	0.26	4.24	3.22	14.583	63.33
Pair 5 Foxpro Pre Test Foxpro Post Test	4.78	3.51	0.35	5.48	4.08	13.610	175.46
Pair 6 Introduction to Windows Pre Test Introduction to Windows Post Test	3.92	3.21	0.32	4.56	3.28	12.216	71.33

Group variable without considering together and taking all four groups for N = 100 for Pre T and Post, 'T' means and the differences are tested for 95% significant level - for all six components.

Even analysis of variance - 'F' values for the observed data are highly significant (0.01 to .001). However F only furnishes a comprehensive or overall test of the significance of the differences among means.

(C) Multiple Comparisons among differences of means in groups.

Significance cannot be assigned to any specific mean differences. Hence multiple compositions within groups by using post Hoc test carried out.

Post Hoc Tests

GROUP

Tukey HSD

		Mean Difference (I - J)	Std. Error	Sig.	95% Confidence Interval	
(I) Group	(J) Group				Lower Bound	Upper Bound
1	2	-2.16	.61	.003	-3.74	-58
	3	-3.60	.61	.000	-5.18	-2.02
	4	-5.16	.61	.000	-6.74	-3.58
2	1	2.16	.61	.000	.58	3.74
	2	-1.44	.61	.089	-3.02	14
	3	-1.56	.61	.055	-4.58	-3.14
3	1	3.60	.61	.000	2.02	5.18
	2	1.44	.61	.089	-14	3.02
	4	-1.56	.61	.055	-3.14	2.48E 02
4	1	5.16	.61	.000	3.58	6.74
	2	3.00	.61	.000	1.42	4.58
	3	1.56	.61	.055	-2.48E 02	3.14

(I) Mean achievement differences of group 2, 3, 4 from Mean achievement differences of group 1 are very highly significant. Hence null hypothesis is rejected. The mean differences are true and highly reliable. Therefore, the treatments which were given to groups 2, 3 and 4 seem to be far better than the group treatment given to group 1.

(II) From the table mean, a difference between group 2 and 3 is significant at 0.089 level and 95% confidence interval is given by 3.02 to 0.14. This is a sufficiently large interval. Null hypothesis cannot be rejected in this case at 0.05 level. This interpretes that treatment 2 (printed modules) and treatment 3 (Video Programmes) do not have any true differences and we have to accept null hypothesis for these two groups.

(III) From the table mean difference between groups 3 and 4 (1.56) is just approaching to the 95% significant level.

Suggestions

1. More computer software packages may be added for the video taped lessons.
2. Duration of the video program may be increased.
3. Same study may be conducted for the rural and urban slow learner students.
4. Same study may be conducted with different age groups of slow learner students.
5. Video programmes for other practical subjects can be prepared for slow learners as well as for the normal students.
6. There should be vocational guidance centers in all the special as well as integrated schools. The services of these centers should be available to all the slow learner students at the time of admission to senior primary section.
7. The above mentioned vocational guidance centers should strongly recommend the Computer education as the most viable career option for the slow learner students.
8. Rehabilitation Council of India should give a positive response to the researchers doing research n the field of slow learners, so that more research efforts should be made in the field of Computer education for the slow learners.
9. Computer education should be opted by the students with slow learners, realizing its long run advantages for their future careers.

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